

CLAIMS

1. A lipopeptide comprising at least one auxiliary T epitope, at least one CTL epitope and at least one lipid moiety characterized in that the epitopes and the lipid portion on the one hand and the epitopes on the other hand are independently separated by amino-acid sequences, so-called spacers, at least one of the spacers having linkages with 1 to 10 amino-acids selected from glycine, arginine, glutamic acid and aspartic acid.
2. A lipopeptide according to claim 1, characterized in that at least one of the spacers comprises from 1 to 10 glycines and/or arginines.
3. A lipopeptide according to one of claims 1 to 2, characterized in that at least one of the spacers has one of the following sequences:
GLY ARG or
ARG GLY ARG
4. A lipopeptide according to one of claims 1 to 3, characterized in that at least one of the spacers comprises one or more glutamic and/or aspartic acids.
5. A lipopeptide according to one of claims 1 to 3, characterized in that the spacers comprise a cysteine or an alkyl chain functionalized by a thiol group and non peptide bonds.
6. A lipopeptide according to any one of claims 1 to 3, characterized in that the spacers comprise a group selected from a thiazolidine, oxime or hydrazone group.
7. A lipopeptide according to one of claims 1 to 6, characterized in that it comprises the linkage of :
- a lipid portion,
- a first spacer,
- an auxiliary T epitope,
- a second spacer, and
- a CTL epitope.
8. A lipopeptide according to one of claims 1 to 6, characterized in that it comprises the linkage of :
- a lipid portion,
- a first spacer,
- an auxiliary T epitope,
- a second spacer,
- a first CTL epitope,
- a third spacer, and
- a second CTL epitope.

9. A lipopeptide according to one of claims 1 to 8, characterized in that the lipid portion comprises one or more linear or branched, saturated or insaturated chains derived from C₁₀-C₂₀ fatty acids or alcohols, or a steroid derivative.

5 10. A lipopeptide according to one of claims 1 to 9, characterized in that the lipid portion comprises at least two chains derived from C₁₀-C₂₀ fatty acids or alcohols, bonded together by one or more amino-acids.

11. A lipopeptide according to one of claims 1 to 10, characterized in that the lipid portion is made of two palmitic acid chains linked to the NH₂ groups of a lysine.

10 12. A lipopeptide according to one of claims 1 to 10, characterized in that the lipid portion comprises one or more chains selected from palmitic, oleic, linoleic, linolenic, 2-amino-hexadecanoic acids, pimelautide or trimexautide.

13. A lipopeptide according to one of claims 1 to 12, characterized in that the non lipid portion comprises from 15 to 100 amino-acids.

15 14. A lipopeptide according to one of claims 1 to 13, characterized in that the auxiliary T epitope is a multivalent epitope.

15. A lipopeptide according to one of claims 1 to 14, characterized in that the auxiliary T epitope is the 830-843 peptide of the tetanic toxin having the following sequence :

QYIKANSKFIGITE

20 16. A lipopeptide according to one of claims 1 to 14, characterized in that the auxiliary T epitope is the haemagglutinin epitope of the influenza virus or the PADRE epitope.

25 17. A lipopeptide according to one of claims 1 to 16, characterized in that it comprises at least a CTL epitope of a protein specific of the melanoma, a HIV protein, VBH, papillomavirus, protein p53 or a protein from the intrahepatocytary stadium of *Plasmodium falciparum*.

18. Use of a lipopeptide according to one of claims 1 to 17 for making a medicine or a vaccine for the induction of a specific immune response.

30 19. Use of a lipopeptide according to one of claims 1 to 17 for making a medicine for the induction of an immune response against HIV, VBH, papillomavirus, the melanoma p-53 or malaria.

20. A pharmaceutical composition, characterized in that it comprises a pharmacologically efficient dose of one or more lipopeptides according to one of claims 1 to 17 and pharmaceutically compatible excipients.

35 21. A medicine or vaccine, characterized in that it comprises one or more lipopeptides according to one of claims 1 to 17.